

REMARKS

The Examiner is thanked for the due consideration given the application.

Upon entry of this amendment, claims 23, 26, 32, 36, 46 and 47 are pending in the application. By this amendment, claims 24, 27-31, 33-35 and 37-45 have been canceled. Independent claim 23 has been amended to generally incorporate subject matter from canceled claim 44 and to better set forth the invention. Independent claim 36 has been amended to generally incorporate subject matter from canceled claim 45 and to better set forth the invention. Claims 46 and 47 are newly presented and correspond, in part, to claims 26 and 46.

No new matter is believed to be added to the application by this amendment.

Entry of this amendment under 37 CFR §1.116 is respectfully requested because it cancels claims and places the application in condition for allowance. Alternately, the cancellation of claims places the application in better form for appeal.

Rejections Based On HUDSON

Claims 23, 24, 26-28 and 40-43 have been rejected under 35 USC §103(a) as being unpatentable over HUDSON (U.S. Patent 1,447,553) in view of MCCLURE (U.S. Patent 4,681,372). Claims 29 and 39 have been rejected under 35 USC §103(a) as being unpatentable over HUDSON in view of MCCLURE, and further in view of MINTER (U.S. Patent 3,440,752). Claims 44 and 45 have been

rejected under 35 USC §103(a) as being unpatentable over HUDSON in view of MCCLURE, and further in view of EP 467003. These rejections are respectfully traversed.

The present invention pertains to a trawl that is illustrated, by way of example, in Figures 5-8 of the application, which are reproduced below.

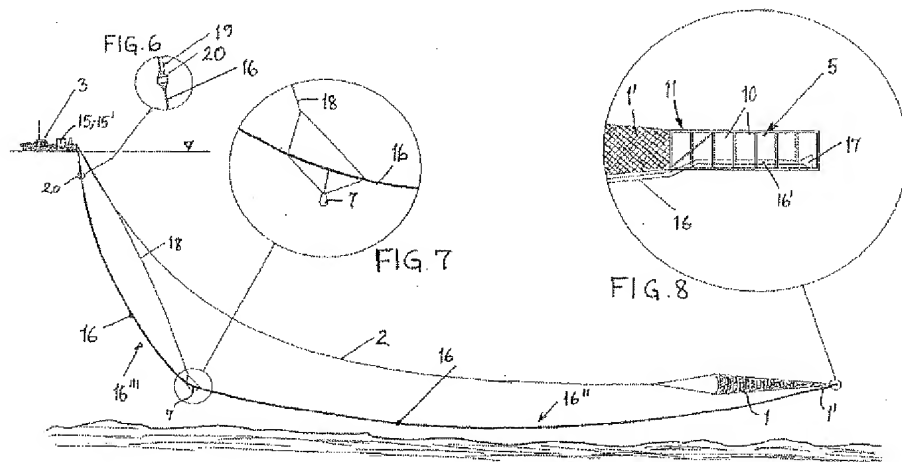


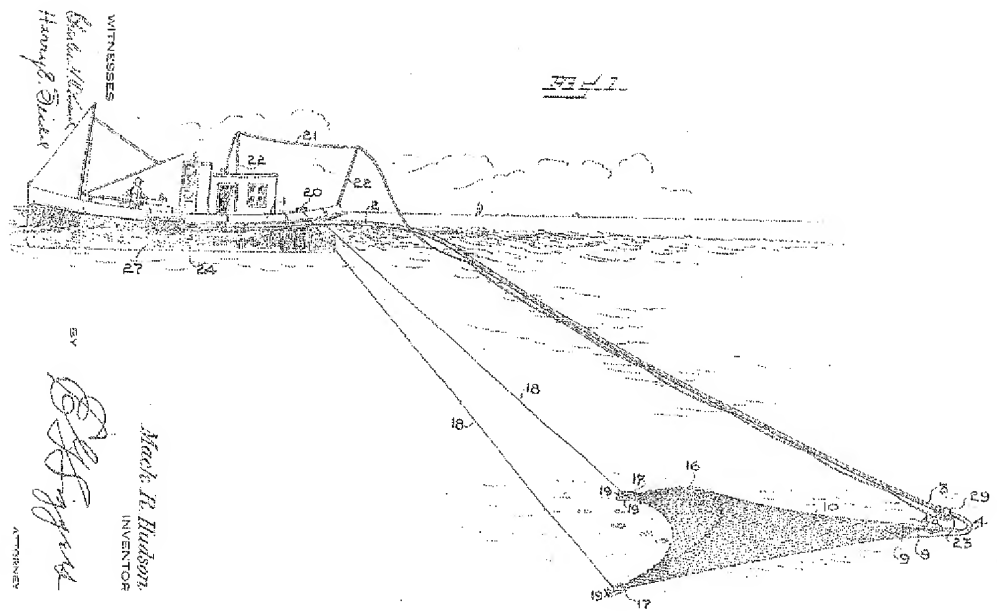
FIG. 5

Figures 5-8 show a trawl 1 having a conveying hose 16 leading to a vessel 3. An injector 20 is located at an upper part of the upward extending portion 16''' of the hose 16.

Independent claim 23 of the present invention recites: "the conveying hose extending from a rear end of the trawl, from a rear end down and along an underside of the trawl towards an inlet region of the trawl, from the trawl inlet region towards in front of the trawl inlet, and therefrom towards an upper region and the vessel." Independent claim 32 of the present invention

recites: "the conveying hose extends from a rear end of the trawl, from the rear end down and along an underside of the trawl towards an inlet region of the trawl, from the trawl inlet region towards in front of the trawl inlet, and therefrom towards said upper area and the vessel."

HUDSON pertains to a trawl. Figure 1 of HUDSON is reproduced below.



In HUDSON, a net 10 conveys fish or shrimp to a vessel 1 with a pipe line 2. A chamber 29 is positioned directly adjacent the net 10. HUDSON makes use of an injector carrying air into conveying hose 4 via a connection 23 and air is supplied from the vessel via hose 2.

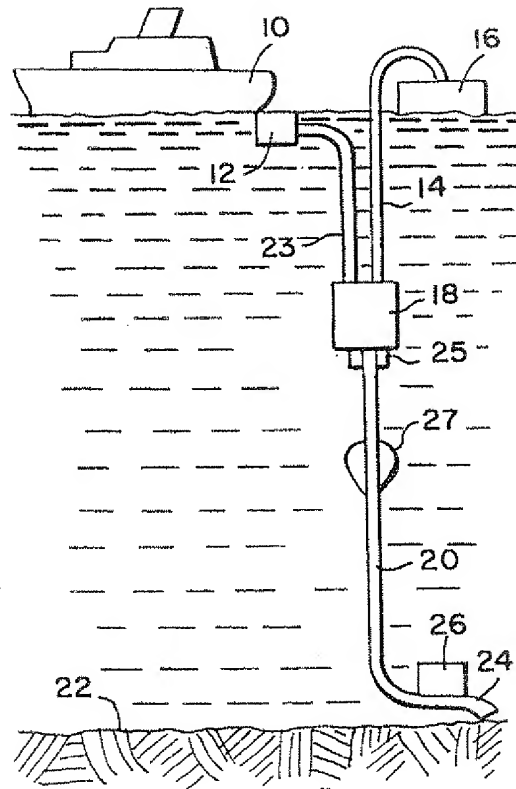
The Official Action argues against claim 26 at page 4 to indicate that adjustment of lines 18 on Figures 1-3 of HUDSON

enables depth adjustment of the ejector. HUDSON uses an air hose 22 from the vessel to the injector. Adjustment of length of lines 18 would imply depth adjustment of the trawl net, it is clearly noticeable in the present invention that the injector is not fixedly attached to the rear end of the trawl. HUDSON has the injector fixedly attached to the trawl end. At page 6, lines 20-24 of the specification, it is stated that adjustment of the level of the injector relative to the collecting cage (and thereby the trawl) can be done. This implies that adjustment of the trawl tow line 2 and thereby the depth of the trawl will not necessarily cause change of level of injector or *vice versa*.

The Official Action acknowledges that HUDSON fails to disclose the upper region with injector is in the upper regions substantially spaced from the trawl. The Official Action refers to MCCLURE to address this deficiency of HUDSON.

MCCLURE pertains to a deep sea mining apparatus. Figure 1 of MCCLURE is reproduced below.

**FIG. 1.**



MCCLURE shows an ejector for sucking minerals, i.e., polymetallic modules from the sea bed. The application of MCCLURE is quite remote from the trawling of HUDSON, and it is therefore non-analogous art.

MCCLURE, although based on ejection, is based on the use of pressurised water. This makes this as prior art even more remote from the present invention's "air" based solution.

Also, the Official Action asserts that MCCLURE has an injector 18 at an upper part of the markedly upward portion of the sucking hose. However, this feature is a jet pumping chamber

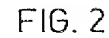
18 connected to a collection barge 16 spaced by "a predetermined depth below the surface of the water." Column 3, lines 26-27. However, these teachings of MCCLURE are clearly aimed at a pumping stage needed at an intermediate depth, and not to an upper region or an upper area, as is set forth in the present invention.

One of ordinary skill and creativity would thus fail to produce a claimed embodiment of the present invention (which allows depth adjustment of the injector, as claimed) from a knowledge of HUDSON and MCCLURE. A *prima facie* case of unpatentability over HUDSON and MCCLURE has thus not been made.

MINTER fails to address the deficiencies of HUDSON and MCCLURE.

The Official Action turns to EP 0467003 and asserts that this reference teaches the use of the conveying hose from rear end of the trawl, along an underside of the trawl towards an inlet area of the trawl and therefrom in front of the trawl and further up to the vessel.

EP 046703 pertains to fishing of krill. Figure 2 of EP 046703 is reproduced below.



From Figure 2 it appears that the suction hose passes through and out of the vessel via a "moonhole", and using a module. The suction hose extends therefrom into the trawl from the mouth end thereof and inside the trawl towards a suction funnel 17 at the bottom end of the trawl. Simultaneously, the suction hose carries cables for light projectors in order to be able to observe what is inside the trawl, using at least one TV-camera 23 attached to the hose.

EP 046703 is thus based on a height difference in order to empty the trawl net, and thus requires that the net is quite close to the vessel, as headloss will otherwise be too high to get extraction running. EP 046703 mentions that 6-8 units of 25 meters are sufficient (column 6, line 7), which confirms that the

inventor considers that Krill can be caught at depth close to 50 m.

Krill is, in fact, more often caught at depths considerably deeper than 50 meters, even down to 500 meters. Krill is close to the surface only for a very short period of time at the beginning of the fishing season. When the sea is rough or "alive", then the fishing vessel may be above the average level of water around, i.e., such as when being on the top of a high amplitude wave. The level of the top of the extraction tube, instead of being below the average level of water, may then find itself above it, thus tending to stop the pump effect due to water level difference.

In addition, EP 046703 utilizes a water height difference of 1 meter to "prime" the suction pump (column 11, lines 7-37: hydraulic calculations). This difference may be too small to keep stable operation in the case of rough seas with large amplitude waves, quite a common case in inhospitable seas, e.g., the Antarctic, where typically krill is caught.

EP 046703 states at column 4, lines 33-35 that the boat is for fishing in not too deep waters, e.g., not exceeding 100 m. The pipe modules used have, according to the disclosure, a length of 25 m and inside diameter of 80 cm. It is stated that 6-8 pieces of this kind are sufficient, which should yield a pipe length of 150-200 m. EP 046703 states that exceeding that number of pieces makes the operation laborious due to the assembling operation, although the space onboard may be available. Another



reason is that the recovery operation that apparently sets limits. See column 5, line 45 to column 6, line 13 of EP 046703.

Therefore, in view if the pipe passing through the moonhole in the keel, and the trawl net being located close behind the boat, it appears that trawling at levels below sea surface of more than 100 m is not contemplated according to EP 046703.

The apparent reason why there is a huge diameter pipe in EP 046703 is that suction is based on a hydraulic level difference and which sets conditions for fluid flow. Installed pumps are not directly sucking water, they are merely emptying to allow a natural flow due to level differences. Water with krill has probably not a negligible head loss, and priming the flow may in itself be a challenge.

Further, krill tend to be caught at depth down to 500 m, and the time period where it lies in the sea at 50 m region below surface is limited. Thus, it is uneconomic to send a boat to the Antarctic just for such first weeks of the krill catching season.

EP 046703 therefore discloses a technical solution which has rather limited usefulness and thus limited relevance.

Some of the problematic teachings in EP 046703 include that at column 2, lines 35-42: "krill in enormous amounts and at limited depths, almost on the surface," which is contradictory to the facts. Column 3, lines 55-57 of EP 046703 implies that there is no injector as in the present invention, i.e., injecting air

into conveyor pipe. Column 9, lines 44-45 of EP 046703 confirms use of water suction pumps.

As a result, one of ordinary and creativity would fail to produce a claimed embodiment of the present invention from a knowledge of HUDSON, MCCLURE and EP 046703. A *prima facie* case of unpatentability over HUDSON, MCCLURE and EP 046703 has thus not been made.

These rejections are believed to be overcome, and withdrawal thereof is respectfully requested.

Conclusion

The Examiner is thanked for considering the Information Disclosure Statement filed June 15, 2005 and for making an initialed PTO-1449 form of record in the application.

Prior art of record but not utilized is believed to be non-pertinent to the instant claims.

The rejections are believed to be overcome, obviated or rendered moot, and that no issues remain. The Examiner is accordingly respectfully requested to place the application in condition for allowance and to issue a Notice of Allowability.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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